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A method of bi-coordinate variations with tolerances and its convergence

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Abstract

© 2016, Allerton Press, Inc.We propose a method of bi-coordinate variations for optimal resource allocation problems, which involve simplex type constraints. It consists in making coordinate-wise steps together with special threshold control and tolerances whose values reduce sequentially. The method is simpler essentially than the usual gradient ones, which enables one to apply it to large dimensional optimization problems. We establish its convergence and rate of convergence under rather mild assumptions.

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Keywords

bi-coordinate variations, optimization problems, rate of convergence, resource allocation, threshold control